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EXAMINER	
WANG, EUGENIA	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,982	TRIFONI ET AL.	
	Examiner	Art Unit	
	Eugenia Wang	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,22,24 and 27* is/are rejected.

7)☒ Claim(s) *4, 5, 6, 9-13, 23, 25, and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/13/04*
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

1. The Preliminary Amendment submitted on December 13, 2004 has been entered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. However, priority has not been perfected. For full priority to be granted, the English translation for the foreign application must be submitted.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on December 13, 2004 has been placed in the application file and the information referred to therein has been considered as to the merits (with the exception of the Research Disclosure, for consideration, a translation is required).

Drawings

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show [108] as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to because the label "FIG 6" is missing from the drawing at the bottom of page 4/10. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to because part [22] in figs. 9a and 9b as well as part [225] in fig. 12a is not clear as to what is it pointing out and does not adequately show the lateral channel it is supposed to define. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities: typographical errors on p 15 with respect to diameter ranges of the calibrated holes "0,1 mm / 5 mm" and "0,2 mm / 1 mm" (lines 8 and 21).

Appropriate correction is required.

Claim Objections

8. Claim 4 is objected to because of the following informalities: Claim 4 recites the typographical error "0,2 / 1mm" in line 3, where it should read '0.2 and 1mm'. Appropriate correction is required.

9. Claims 6 and 8 are objected to because of the following informalities: Claim 6 recites the typographical error "clam 5" in line 2, where it should read 'claim 5'. Since claim 8 is dependent on claim 6, it is objected to for the same reason. Appropriate correction is required.

10. Claims 9-13 are objected to because of the following informalities: Claim 9 recites the pronoun "it," whereas using the noun 'the generator' would more clearly define the pronoun. Since claims 10-13 are dependent on claim 9, they are objected to for the same reason. Appropriate correction is required.

11. Claim 24 is objected to because of the following informalities: Claim 24 recites the typographical error 'calibrate holes', whereas it should read "calibrated holes." Appropriate correction is required

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the thermal management" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Interpretation

13. Although incorporation of reference numbers into the claim is permitted, the reference characters have no effect on the scope of the claim. See MPEP 608.01(m) and MPEP 2173.05(s).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1, 3, 5-12, 14-16, 17-20, 22, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2002/0142201 (Nelson).

As to claim 1, Nelson teaches a membrane electrochemical generator (fuel cell stack [10]), where gaseous reactants are fed into a fuel cell stack (para 0026, lines 1-7;

fig. 1). Additionally, fig. 1 depicts one fuel cell [12] (reactive cell) that is broken out. In that fuel cell, the anode cooler plate [16] and cathode cooler plate [20] serves as the conductive bipolar plates. (The cooler plates are inherently conductive through the MEA portion [18], as is required for fuel cell function within a stack.) Furthermore, it cooler plate shows a multiplicity of fluid injection calibrated holes (water inlet ports [58a-d]) for water to be injected in some sort of manner (and thus imparting some sort of calibrated flow) (fig. 3).

As to claim 3, Nelson shows that the fluid injection calibrated holes [58a-d] is mutually aligned to cathode intake (feed) opening [24] and anode intake (feed) opening [30] as well as coolant intake (feed) opening [34], wherein coolant opening [34] can interpreted to be a side opening in a parimetrical portion of cathode cooler plate [20] or anode cooler plate [16] (figs. 3 and 4).

As to claim 5, Nelson's fuel cell stack has bipolar plate interposed between a pair of sealing gaskets, as demonstrated by coolant seal gasket [42] and membrane gasket [44] (fig. 1). (Note: The membrane gasket [44] of fuel cell [12] and the coolant seal gasket [42] of fuel cell 14 would surround the combined cathode cooler plate [20] of fuel cell [12].) Using gasket [42] and comparing it to that of reticulated anode cooler plate [16] of fuel cell [12] as a visual example, it is seen that the feed openings of the reactants [30, 24, 26, 32], the coolant side openings [34, 36], and the distribution channels that are connected to the feed openings [38] are recognized in the gasket (fig. 1).

As to claims 6 and 7, Nelson teaches that cathode reactant surface [27] has a gasket group [76] that receives the membrane gasket [44] (para 0042). Therefore groove [76] is indicative of how gasket [44] fits onto the plate. As seen in fig. 4, there is a fluid collection channel (water channel [72]) connected to side opening [34] interposed between cathode and anode opening [24, 30] and the cathode channels [28a-d]. As water channel [72] delivers water from water intake [70] to the water inlet ports [58a-d], it is suited to collect cooling fluid (fig. 4; para 0041) (as applied to claims 6 and 7). Furthermore, it can be noted that the fluid connection channel [72] is connected to the distribution channels [28a-d], as it is placed next to the area where the distribution channels are (fig. 4) (as applied to claim 7).

As to claim 8, Nelson teaches that channel [72] is superposed on the fluid injection calibrated holes [58a-d] (compare to membrane gasket [44]) (figs. 1 and 4). There is some sort of correspondence of this to the distribution channels of the other sealing gasket, barring a specified correspondence (compare the superimposition of membrane gasket [44] to coolant seal gasket [42]). (Note: Absent clear definition, the assembly of Nelson is considered to be filter-press, as a stack would be pressed together.)

As to claim 9, Nelson teaches a fuel cell stack, wherein every other cell can be defined as an "additional cell." Therefore, in fig. 1, fuel cell [12] can be defined as a reaction cell, fuel cell [14] can be defined as an additional cell, and fuel cell [15] can be defined as a reaction cell. Fuel cell [14] inherently has conductive portions in it (through MEA area [18], as is necessary for fuel cell stack operation). Additionally, such an

element is reticulated as it has a network of channels (as exemplified in figs. 3 and 4). Furthermore, it is seen that fuel cell [14] has side openings [34] for the passage of cooling fluid, a fluid collection channel (the channels that traverse between water inlet parts [58a-d] and end points [54a-d]), feed openings for passage of gaseous reactants (cathode and anode inlet openings [24], [30]), discharge openings for discharging reaction products and residual reactants (anode and cathode outlet openings [32], [26]) (figs. 1, 3, and 4). (This is applying the features of exemplified fuel cell [12] to that of fuel cell [14].)

As to claim 10, Nelson's cathode cooler plate [20] has fluid collection channel (the channels that traverse between water inlet parts [58a] and end points [54a-d]) below the feed openings of the anode and cathode [30, 24] (fig. 3).

As to claim 11, Nelson teaches the fluid collection channel (the channels that traverse between water inlet parts [58a] and end points [54a-d]) is superposed on the fluid injection calibrated holes [58a-d] (figs. 1 and 3). (Note: Absent clear definition, the assembly of Nelson is considered to be filter-press, as a stack would be pressed together.)

As to claim 12, Nelson teaches that the fluid collection channel (the channels that traverse between water inlet parts [58a] and end points [54a-d]) is formed by a first and second portion [34, 36], wherein the channels are above the discharge openings [32, 26].

As to claim 14, Nelson teaches a bipolar plate (as exemplified by cathode cooler plate [20]) with a multiplicity of first calibrated holes for the passage of reactants [68a-

68d] and a multiplicity of second calibrated holes for the discharge of optional residual reactants [70a-d]. It can be shown that the fluid injection calibrated holes [58a-d] are placed in correspondence to that of the first calibrated holes [68a-d].

As to claim 15, Nelson's invention has first calibrated holes [68a-d] mutually aligned and placed in some sort of correspondence to feed openings [24, 30] of the bipolar plate (cathode cooler plate [20]) (fig. 4). Accordingly, second calibrated holes [70a-d] are placed in some correspondence to discharge openings [26, 32], which are placed on a perimetrical portion of conductive plate [20] (fig. 4). (Note: In another interpretation, the bipolar plate can comprise of the combination of the cathode cooler plate [20] and anode cooler plate [16], which is not shown. However it is mentioned that it is the mirror image to that of the cathode plate (para 0043).)

As to claim 16, Nelson's stack has a sealing gasket (membrane gasket [44]) that is seen to cover only one face of the bipolar plate (cathode cooler plate [20]), wherein the gasket [44] realizes an area for conductive reticulated element (portion [28]).

As to claim 17, using a broad interpretation, Nelson's teaching can be applied. Either gasket [42, 44] of the cooler plates in every other cell can be considered to be an additional cell (with the intermediate cells being the reaction cells). For example purposes, membrane gasket [44] is focused on. Using this interpretation, since membrane gasket [44] is an "additional cell" as the fuel cell it belongs to is not interpreted to be a reaction cell. However, the cells on either side of it are interpreted to be "reaction cells." Using fig. 1, the cell to the right of fuel cell [12] (not shown) is a reaction cell, as is fuel cell [14]. Fuel cell [12] is not interpreted to be a reaction cell,

however membrane gasket [44] is considered to be an additionally cell sandwiched between two reaction cells. The frame of the gasket is the rigid perimetric portion (as it has some degree of rigidity, especially when compressed within fuel cell stack), with a hollow center (fig. 1). (For a better view of the shape of the gasket, please refer to fig. 4, item [76]. Item [76] is a groove for the gasket, and so the gasket's shape is as shown.) As seen in fig. 4, the gasket area separates the gaseous reactants, as it blocks out fuel inlet [30], fuel outlet [32], oxidant inlet [24] and oxidant outlet [26]. Additionally, the hollow center has an area for the electrically conductive central portion of the cathode cooler plate, in which it is placed on. (Recall, the channels of the in the central portion of the cooler plates are inherently electrically conductive, as is necessary for the function of the fuel cell stack.)

As to claim 18, Nelson's gasket (as embodied by the shape of the gasket groove [76] for clarity's sake) has reactant feed openings [30, 24], reactant discharge openings [26, 32], as well as side openings for the passage of cooling fluid [34, 36].

As to claim 19, Nelson et al.'s additional cell is a gasket, and so each face is covered by a gasket that defines a rigid perimetrical portion (as the claim does not preclude the gasket and the additional cell being one in the same). The sections that separate the reactant inlets [30, 24] can be considered a zone of collection placed in correspondence to the inlets, as some reactant would gather in the areas around the inlets, but blocked off by the seal area. Likewise, the sections that separate the reactant outlets [26, 32] can be considered a zone of collection placed in correspondence to the outlets, as some discharge would gather in the areas around the

outlets, but blocked off by the seal area. Additionally, it can be interpreted that there is a channel that connects the collection zone to the outlet, with the channel being the height of the gasket itself.

As to claim 20, Nelson's gasket [44] is the additional cell. And the portions of seal portions around the reaction inlets/outlets [30/24, 26/32] serve to hinder the leakage of reactant and reactant products from entering the central hollow portion, and thus hinders the passage of gaseous reactants and reaction products within the cell.

As to claim 22, Nelson teaches that fluid injection calibrated holes [58a-d] are placed between first calibrated holes [68a-d] (fig. 4). The gasket (defined by gasket groove [76] in fig. 4) defines a fluid collection channel, wherein some portion is below the feed openings [30, 24]. The channel is defined by the height of the height of the gasket.

As to claim 24, it can be seen that the fluid collection channel (created by the gasket, its represented structure filling that of gasket groove [76]) is superposed to the calibrated holes [58a-d].

As to claim 27, Nelson teaches that the coolant is a mixture of gas and liquid water (abs).

15. Claims 1, 2, 4, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5998054 (Jones et al.).

As to claim 1, Jones et al. teaches an electrochemical generator (fuel cell assembly [100]), wherein the working section [114] made up of many layers [118] that form fluid manifolds for supplying fluids to and removing fluids from the working section,

where each layer forms a working cell (the exemplified multiplicity of cells provided being 108) (col. 4, lines 65-67; col. 5, lines 1-10; fig. 1). The cells have a fluid flow plate [120] made of conductive material, such as graphite and can be a **bipolar**, monopolar, anode cooler, or cathode cooler plate (col. 5, lines 32-40; fig. 2). Furthermore, liquid water is metered into each fluid flowplate inlet [126] through injection ports [131] (col. 6, lines 28-37; fig. 3). As liquid water is injected, it is considered that it is a cooling fluid that is injected inside the reaction cells [118]. (It is said that the injection ports [131] can be made circular with a diameter of 0.005 to 0.010 inches, thus imparting some calibration to the holes and some calibration to the flow with respect to the hole size.)

As to claim 2, Jones et al. teaches that the fuel cell is a PEM-type fuel cell with a cathode (cathodic chamber) and an anode (anodic chamber) around a PEM (membrane) (col. 5, lines 10-20). As mentioned before, the cells have a fluid flow plate [120] (electrically conductive reticulated element) made of conductive material, such as graphite and can be a **bipolar**, monopolar, anode cooler, or cathode cooler plate (col. 5, lines 32-40; fig. 2). As seen in fig. 2 and fig. 3, the plate is where injection ports [131] lie. Liquid water (cooling liquid) is injected and would inherently have some degree of evaporation as it provides humidification and thermal management as it passes through the cell. (The reason for inherency is that the fuel cell runs at a certain temperature and thus by passing liquid water through it, some of it would evaporate to some degree, thus absorbing heat and managing the thermal properties of the electrochemical generator.)

As to claim 4, Jones et al. teaches that the diameter of the injection ports [131] is circular with a diameter of 0.005 to 0.010 in., depending on such factors as desired

water injection rates (col. 5, lines 64-66). Using the conversion that 1 in. = 25.4 mm, the range 0.005 to 0.010 in. is equivalent 0.127 mm to 0.254. Therefore for the range of 0.200 mm to 0.254 mm that Jones et al. teaches is anticipatory of the range claimed by the instant application.

As to claim 27, Jones et al. teaches that liquid water is injected into ports 131 (col. 6, lines 28-38), and thus it can be considered a cooling fluid.

16. Claims 1, 2, 9, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2003/0039875 (Horiguchi et al.).

As to claim 1, Horiguchi et al. teach a membrane electrochemical cell with reaction cells, as indicated by fig. 6 with fuel cell stack [1] indicating a multiplicity of cells. In a close-up view, it is seen that unit cells [10A] are split by a bipolar plate (current collectors [14, 15]), which are made out of conductive metal (fig. 5; para 0067). Furthermore one portion of the bipolar plate (current collector [14]) has a multiplicity of calibrated holes (through-holes [143]), which imparts some sort of calibrated flow for a cooling fluid (water in cooling space [S2] through the holes [143] to air space [S1]).

As to claim 2, Horiguchi et al. teach that a reaction cell has an anodic chamber ([S3] side of the cell) and a cathodic chamber ([S1] side of cell). (Although one unit cell is not shown to have both in fig. 5, the representative view shows the structure of an anode [13] side and a cathode [12] side of each unit cell, and so each cell would have an anodic chamber and cathodic chamber.) Furthermore, current collectors [14, 15] made of conductive metal and provide reactant to the anode and cathode and are thus reticulated. Furthermore, it is said that water cools and then is evaporated, and the

water vapor is absorbed into the air pass side [S1], thus humidifying and hydrating (para 0026-0027).

As to claim 9, Horiguchi et al. teaches additional cells, wherein every other cell in a fuel cell stack can be defined as an "additional cell." Furthermore, each cell would recognize the reactant seats (for example in fig. 3, oblong passages [144, 153] in collectors [14] and [15] are the inlet and outlet passages for hydrogen). Furthermore, passages [173] in fig. 7 exemplify air passages [173] (with inlet being on one side and the outlet being on the other side). It is noted that both the coolant (water) and air are flowed through the air passes [173], so air passes [173] also serve as the "side openings" as claimed by the instant application (fig. 7; para 0021).

As to claim 13, Horiguchi et al. teaches that water runs through cooling space [S2], and as can bee seen in fig. 5, some water is transferred through the through-holes [143], as the water traverses the area. Therefore, there is a portion of water that traverses the whole plate before entering the fluid injection holes [143] (see fig. 16, for how the air traverses through the plate and through holes before exiting).

Allowable Subject Matter

17. Claims 21 and 23-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an Examiner's statement of reasons for allowance: None of the prior art of record, alone or in combination appear to teach, suggest, or render obvious the invention of at least claims 21, 23, 25, and 26.

Claim 21 teaches a generator comprising the elements therein. Notably, it teaches that the zone of collection of the gaseous reactants is superposed to said first calibrated holes and said zone of collection of the reaction products and of the residual reactants is superposed to said second calibrated holes.

Nelson's teaching can be seen in fig. 4. It is clear that the zone of collections for both the reactants and the products (the areas around inlets and outlets [30, 24, 26, 32]) are not superposed on the first and second calibrated holes, [68a-d] and [70a-d], respectively.

Claim 23 teaches a generator comprising the elements therein. Notably, it teaches that there is a fluid collection channel interposed between said feed openings of said additional cell and said zone of collection of the gaseous reactants.

Nelson's teaching can be seen in fig. 4. It is clear that there is no fluid collection channel interposed within the gasket (shown by portion [76]), which is interpreted as the additional cell, between the inlet openings [30, 24] and the zone of collection (interpreted as the gasketed portion below the inlet openings).

Claim 25 teaches a generator comprising the elements therein. Notably, it teaches that there is a first and a second fluid collection lateral channel connected to the side openings of the additional cells and placed above said discharge openings of said additional cells and that said cooling fluid, prior to reaching said fluid injection holes passes through the first and second fluid collection lateral channels to cross subsequently the whole surface of said respective electrically conductive reticulated

element pre-heating counter-currently or concurrently with respect to at least one gaseous flow entering said reaction cells..

Nelson's teaching can be seen in fig. 4. It is clear that no lateral channels exist. Even if they did, they would not impart the structure that allows cooling fluid to traverse the whole surface before reaching the fluid injection holes.

Claim 26 teaches a generator comprising the elements therein. Notably, it teaches a first and second fluid collection lateral channel connected said side openings of said of said additional cells and placed above said discharge openings, a third and a fourth fluid collection lateral channel connected to said side openings of said additional cells and placed below said feed openings of said additional cells, a fluid collection channel interposed between said feed openings of said additional cells and said zone of collection of the gaseous reactants and connected to said side openings of said additional cells, that said cooling fluid, prior to reaching said fluid injection holes enters through said first and second fluid collection lateral channel to subsequently cross the whole surface of said respective electrically conductive reticulated element pre-heating counter-currently or concurrently with respect to at least one gaseous flow entering said reaction cells, said cooling fluid subsequently exiting from said third and fourth fluid collection lateral channel, and that in a filter-press configuration said fluid collection channel is superposed to said fluid injection calibrated holes.

Nelson's teaching can be seen in fig. 4. It is clear that no lateral channels exist. Even if they did, they would not impart the structure that allows cooling fluid to traverse the whole surface before reaching the fluid injection holes. Furthermore, no fluid

collection channel is interposed within the gasket (shown by portion [76]), which is interpreted as the additional cell, between the inlet openings [30, 24] and the zone of collection (interpreted as the gasketed portion below the inlet openings).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugenia Wang whose telephone number is 571-272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EW

GREGG CANTELMO
PRIMARY EXAMINER

10/10/09